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A

# New Electric Light,

—FOR THE—

DIAGNOSIS AND TREATMENT OF DISEASES OF THE NOSE  
AND THROAT, WITH A PRACTICAL DEMONSTRATION.

—BY—

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# A NEW ELECTRIC LIGHT

FOR THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE  
NOSE AND THROAT, WITH A PRACTICAL DEMONSTRATION.\*

By WILLIAM CHAPMAN JARVIS, M. D., Clinical Professor of Laryngology in the University of the City of New York.

*Mr. President and Gentlemen of the Medical Society of the State of New York :—*

After long-continued experimentation, I feel encouraged to present my electric illuminating apparatus for your consideration and candid criticism. Those of you who have had occasion to examine and operate in the accessible cavities of the body, must have frequently felt the need of improved methods of illumination. It is hardly necessary for me to detail the advantages possessed by the electric over other forms of artificial light. They principally consist in the elimination of the element heat, and their great portability as compared with other forms of illuminating apparatus. Furthermore, the light being attached to the operator, forms practically a part of his person, and renders possible manipulations, which would be exceedingly difficult to perform by the employment of the methods in common use.

To Dr. Carl Seiler of Philadelphia, is due, I believe, the credit of successfully accomplishing and popularizing electric illumination for the examination of the upper air passages in this country. He made use of slender rods of carbon, working according to the Brush principle.†

\*Presented to the Medical Society of the State of New York, February 4, 1885, also to the New York Academy of Medicine, February 23d and March 14th.

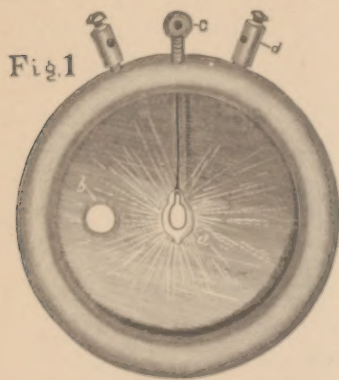
†Diseases of the Throat, 1883, p. 23.





The success of Edison's experiments with electric carbon filaments enclosed in glass globes, naturally suggested the employment of very small lamps for illuminating the upper air passages.

I have succeeded in rendering practical the electric illumination of the nasal and laryngeal cavities in two ways, namely, by means of an electric head-mirror or reflector, and by an independently acting laryngoscope and rhinoscope.



I have here, you observe, two forms of head mirrors, one with and the other without condensing lenses. Of the two I prefer the mirror *without* the lens; Fig. 1. The rays of light emanating from the incandescent carbon filament, are reflected from the surface of this concave mirror, and focussed upon the parts to be examined. The mirror, may be perforated at *b* between its centre and the

wooden frame, avoiding the disagreeable effect of the light shining into the observer's eye, or the observer may glance over the edge of the mirror. The middle of the mirror being the best portion for collecting and reflecting the light, an additional advantage is obtained by having the bulb at this point. Just here I might explain that, unlike other reflectors, my own is not intended to be worn high upon the forehead, although of course, it can be so adjusted, but with the lateral perforation just in front of the eye. This arrangement enables the observer to see the parts illuminated in a line with the reflected rays, the only way in which the deeper portions of the nares can be satisfactorily and directly brought into view.

The wooden frame surrounding the mirror serves as a support for the binding posts *d. d.* The ball *c.* fits into a socket attached to the head band.

The use of the condensing lens is not a novelty. Its combination, however, with a reflector, as exhibited in this instrument, is, I believe, a new feature in electric head mirrors. The mirror may be worn, either strapped upon the forehead in the usual way, or adjusted more firmly and comfortably to

this rigid head band, made to accurately fit the head, a device of my own.

I find the head mirror particularly useful, and frequently employ it to avoid an explosion while using rhigolene in operations upon the nose, as first proposed by me in the *New York Medical Record*.<sup>\*</sup> As I have already pointed out, these surgical procedures may be invariably accomplished in a painless manner, when rhigolene is properly employed, a rule, as many know, which does not apply to cocaine. The protection afforded by the glass bulb, also obviously, enables one to employ ether in operations upon the nose and throat, for the production of general anæsthesia.

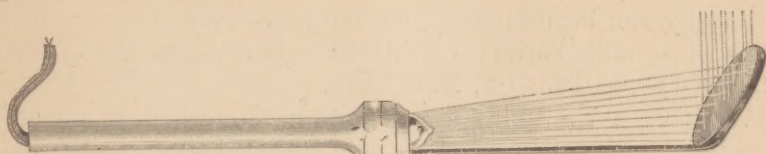


FIG. 2.

The electric laryngoscope and rhinoscope, (Fig. 2,) consists simply of these familiar mirrors with the glass bulbs attached to their stems. In my earlier instruments, the bulb was attached to the mirror's stem, only a few lines distant from the glass. I soon discovered that this arrangement was not only inconvenient in cleansing the mirror, but also rendered the glass bulb liable to injury. These objections I overcame by removing and placing the glass bulb in a convenient handle, to which the stem of the mirror was fastened. This essentially places the source of light outside of the mouth, thus removing the element of heat, in addition to the other objections already mentioned. The reflecting intensity of the glass bulbs may be increased by means of small metallic cups, or, as ingeniously suggested by Dr. M. Josiah Roberts, by silvering the backs of the bulbs.<sup>†</sup>

A home-made electric laryngoscope can be readily constructed by slipping the small glass bulb into a pipe stem, and simply fastening the stem of the mirror into the improvised handle. The small carbon filament bulbs and conducting cords can be obtained from Tillotson & Co., 5 Dey St., New York, or from any properly equipped electric supply dépôt.

<sup>\*</sup>*New York Medical Record*, Vol. 27, No. II., 1885.

<sup>†</sup>Exhibitor of "Jarvis' Electric Laryngoscope" for general surgery to the New York Academy of Medicine, Feb. 23, 1885.—*Medical Record*, Feb. 28, 1885.



As regards the battery, many kinds are obtainable for running these diminutive electric lamps. Those possessing a galvanocautery battery, are obviously already equipped. Many of you are familiar with the several forms of electric lighting apparatus now in the market. Originally quite expensive, competition has greatly reduced their cost, and made them conveniently obtainable by all. The common form of battery employed for minor electric illumination is the small zinc-carbon cell, either placed together in a cell or so constructed that the carbon may serve the double purpose of a cell and negative plate. This arrangement of course favors portability by economizing space. The exciting fluid in these modified Bunsen batteries is usually the bi-sulphate of mercury. A very good and inexpensive portable battery of this kind is constructed by Otto Rauda, 130 William St., New York.

We have, in the well-known electric accumulator, a portable arrangement. The objections to storage batteries are their weight and the trouble involved in refilling them. This is either accomplished by means of a powerful battery, or much more conveniently by connecting them with a dynamo-electric machine. This battery procured by me from G. W. Foster, of New York, is really a generating and storage battery combined in a small cell. Mr. F. states that it is capable of running a year without the necessity of renewing the chemicals, and should not be confounded with the feeble chlorine batteries, which when once accidentally exhausted never recuperate. It consists of an unusually porous carbon plate and a small stick of zinc immersed in a super-saturated solution of bichromate of potassium, chloride of sodium and permanganate of potassium. The super-saturation is the secret of the battery's prolonged activity. A disadvantage in this battery is discoverable in its liability to polarize, thereby necessitating the removal and cleansing of the zincs.

The head mirror or reflectors can, obviously, be also advantageously employed for illuminating the eye, ear, vagina, rectum, or the surface of the body.



*BY THE SAME AUTHOR.*

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